

10/045 866

CotC

PTO/SB/21 (09-04)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

26

Application Number	6,970,736
Filing Date	November 29, 2005
First Named Inventor	Komachi et al.
Art Unit	
Examiner Name	
Attorney Docket Number	RYOU-OP275US

Attorney Docket Number RYOU-OP275US

ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below): Request for Certificate of correction Copy of previously filed office action reply Post Card
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Reply to Missing Parts/ Incomplete Application	<input type="checkbox"/> Landscape Table on CD	
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Remarks	

Certificate

FEB 08 2006

of Correction

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	BROWN & MICHAELS, PC		
Signature			
Printed name	Meghan A. Van Leeuwen		
Date	11/30/04	Reg. No.	45,612

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Justin Wood	Date	11/30/04

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

FEB 8 LUUB



Patent No. 6,970,736

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Number: 6,970,736
Issued: November 29, 2005
Name of Patentee: Komachi et al.
Title of Invention: ANALYSIS SYSTEM OF MATTER ADHERED TO INSIDE WALL
OF VESSEL

Commissioner of Patents and Trademarks
Washington, DC 20231
Attn: Certificate of Correction Branch

**REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT
FOR PTO MISTAKE (37 CFR 1.322)**

1. Attached in duplicate is Form PTO/SB/44 with at least one copy being suitable for printing.
2. Attached are copies of the following:
 - Office action response dated November 2, 2004
 - Copy of the abstract and relevant claims for issued patent 6,970,736 (Cover page and columns 7 through 8).
3. The exact page and line numbers where errors occur in the application file are:

Abstract, line 6: "receivingoptical" should read "receiving optical"

Abstract, line 9: "reciving" should read "receiving"

Claim 1 (Column 7, line 17): "inset" should read "insert"

Claim 1 (Column 7, line 18): "inserted said vessel" should read "inserted into said vessel"

Claim 1 (Column 7, line 20): "menu" should read "main"
4. Regarding the errors introduced by the patent office, the correct wording for the Abstract errors is found on page 2 of the office action response dated November 2, 2004. The correct wording for the claim errors is found on page 3 (claim 9) of the office action response dated November 2, 2004.
5. Please send the Certificate to:

Meghan Van Leeuwen
Brown & Michaels, P.C.
400 M&T Bank Building
118 North Tioga Street

FEB 8 2006

Ithaca, New York 14850-4343

By: Meghan Van Leeuwen

Meghan Van Leeuwen, Reg. No. 45,612

Agent of Record

Date: 1/30/04

FEB 8 2004

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,970,736

DATED: November 29, 2005

INVENTOR: Komachi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Section (57), Abstract, line 6: replace "receivingoptical" with "receiving optical"

Section (57), Abstract, line 9: replace "reciving" with "receiving"

Column 7, line 17: replace "inset" with "insert"

Column 7, line 18: replace "inserted said vessel" with "inserted into said vessel"

Column 7, line 20: replace "menu" with "main"

MAILING ADDRESS OF SENDER:

PATENT NO. 6,970,736

Brown & Michaels
400 M&T Bank Building
118 North Tioga Street
Ithaca, New York 14850-4343

(PTO FORM PTO/SB/44)

FEB 8 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,970,736

DATED: November 29, 2005

INVENTOR: Komachi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Section (57), Abstract, line 6: replace "receivingoptical" with "receiving optical"

Section (57), Abstract, line 9: replace "reciving" with "receiving"

Column 7, line 17: replace "inset" with "insert"

Column 7, line 18: replace "inserted said vessel" with "inserted into said vessel"

Column 7, line 20: replace "menu" with "main"

MAILING ADDRESS OF SENDER:

PATENT NO. 6,970,736

Brown & Michaels
400 M&T Bank Building
118 North Tioga Street
Ithaca, New York 14850-4343

(PTO FORM PTO/SB/44)

FEB 8 2006



US006970736B2

(12) United States Patent
Komachi et al.

(10) Patent No.: US 6,970,736 B2
(45) Date of Patent: Nov. 29, 2005

- (54) ANALYSIS SYSTEM OF MATTER ADHERED TO INSIDE WALL OF VESSEL

- (75) Inventors: Yuichi Komachi, Akishima (JP);
Katsuo Aizawa, Yokohama (JP);
Atsushi Utsumi, Kawanishi (JP)

- (73) Assignee: Machida Endoscope Co., Ltd., Tokyo
(JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 515 days.

(21) Appl. No.: 10/045,866

(22) Filed: Oct. 29, 2001

(65) **Prior Publication Data**

US 2002/0072678 A1 Jun. 13, 2002

(30) Foreign Application Priority Data

Oct. 31, 2000 (JP) 2000-331737

(51) Int. Cl.⁷ A61B 5/02; A61B 6/00;

(52) U.S. Cl. 600/479; 600/407; 600/476;
385/115; 385/116; 385/120; 385/123

(58) Field of Search 600/475, 477,
600/478, 377, 342, 182; 606/13-17, 7; 385/12,
385/28, 58, 49, 70, 116, 117, 118, 120; 356/301

(56) References Cited

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"Study of Fiber-optic Probes for *in Vivo* Medical Raman Spectroscopy", M.G. Shim, B.C. Wilson, E. Marple, and M. Wach, Applied Spectroscopy, vol. 53, No. 6, 1999, pp 619-627.

* cited by examiner

Primary Examiner—Ali Imam

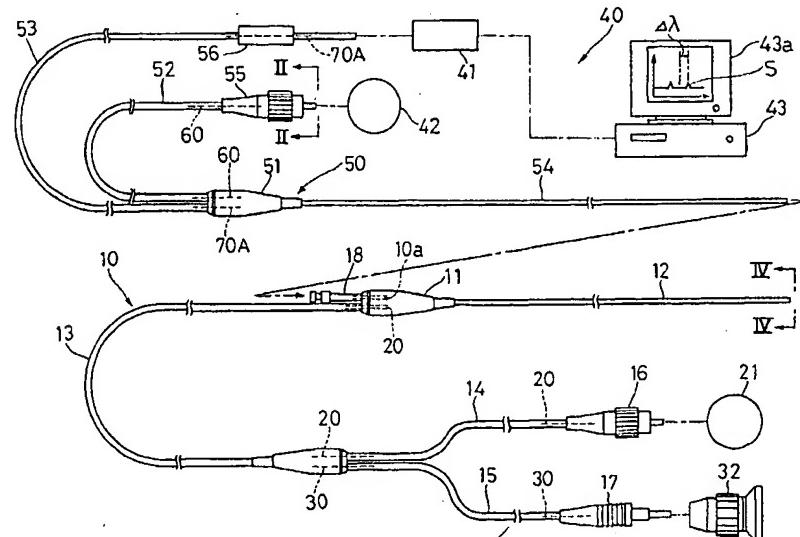
Assistant Examiner—Baisakhi Roy

(74) *Attorney, Agent, or Firm*—Brown & Michaels, PC;
Eugene Stephens & Associates

(57) **ABSTRACT**

An analysis system comprises an endoscope 10 insertable into the vessel and a Raman analysis apparatus 40. An insert cable 54 of the Raman analysis apparatus 40 is inserted into a channel 10a of the endoscope 10. An excitation optical fiber 60 and a bundle 70A of a plural number of light receiving optical fibers 70 are received in the insert cable 54. A transparent small piece 63 having a film-like excitation optical filter 64 is abutted against the distal end of the fiber 60. A transparent plate 71 having a film-like light receiving optical filter 72 is abutted against the distal end of fibers bundle 70A. The plate 71 has a center hole 71a and the piece 63 is fitted into the hole 71a.

3 Claims, 5 Drawing Sheets



FEB 8 LUUB

light receiving optical fibers bundle 70A. The band pass filter 64 is vapor deposited on the distal end face of the excitation optical fiber 60 and a notch filter 72 is vapor deposited on the distal end face of the light receiving optical fiber bundle 70A.

The present invention should not be limited to the above embodiments. Instead, many changes and modifications can be made in accordance with necessity.

For example, a catheter can be used as the guiding apparatus. The window formed in the distal end of the insert portion of the guiding apparatus may be open.

What is claimed is:

1. An analysis system of matter adhered to an inside wall of a vessel comprising:
 - a guiding apparatus including
 - a main body portion,
 - a flexible inset portion extending from said main body portion and being able to be inserted said vessel and having a window formed in a distal end thereof, and
 - a channel extending through said main body portion and insert portion and reaching said window, and
 - a Raman analysis apparatus including
 - a light source emitting an excitation light,
 - a spectroscope spectrally analyzing said matter adhered to the inside wall of said vessel,
 - a flexible insert cable to be inserted into said channel and whose distal end is faced with said window, an excitation optical fiber being received in said insert cable and whose basal end is connected to said light source for transmitting said excitation light and whose distal end is arranged at a central area of the distal end portion of said insert cable,
 - a plural number of light receiving optical fibers being received in said insert cable and whose basal end are connected to said spectroscope and whose distal end are arranged in such a manner as to surround said excitation optical fiber at the distal end portion of said insert cable,

a transparent excitation small piece having a film-like excitation optical filter adhered to a surface thereof and the surface being abutted against a distal end of said excitation optical fiber, said film-like excitation optical filter cutting all light only excepting a light having a predetermined wavelength, and

a transparent light receiving plate having a film-like light receiving optical filter adhered to a surface thereof and the surface being abutted against distal ends of said plural number of light receiving optical fibers, said film-like light receiving optical filter cutting only a light having said predetermined wavelength,

wherein said excitation light along said excitation optical fiber is projected through said window and Raman scattered by impinging on said matter adhered to the inside wall of said vessel, said scattered light is made incident to said window, and said incident light is transmitted along said light receiving optical fibers to said spectroscope for analyzing, and

wherein said transparent light receiving plate has a center hole and said transparent excitation small piece is fitted into said center hole.

2. An analysis system of matter adhered to an inside wall of a vessel according to claim 1, wherein another excitation optical filter for cutting all light only excepting a light having said predetermined wavelength is disposed between said light source and said excitation optical fiber.

3. An analysis system of matter adhered to an inside wall of a vessel according to claim 1, wherein said guiding apparatus is an endoscope through which an interior of said vessel can be observed.

* * * * *



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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

	Application Number	10/045,866
	Filing Date	October 29, 2001
	First Named Inventor	Komachi
	Art Unit	3737
	Examiner Name	Qaderi, Runa S.
Total Number of Pages in This Submission	19	Attorney Docket Number
		RYOU-OP275US

ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Post Card
<input type="checkbox"/> Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	BROWN & MICHAELS, PC		
Signature	 Reg. No. 45,612		
Printed name	Meghan A. Van Leeuwen		
Date	11/2/04	Reg. No.	45,612

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Signature			
Typed or printed name	Justin Wood	Date	11/2/04

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**FEE TRANSMITTAL
for FY 2005**

Effective 10/01/2004. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 110.00)

Complete if Known

Application Number	10/045,866
Filing Date	October 29, 2001
First Named Inventor	Kornachi
Examiner Name	Qaderi, Runa S.
Art Unit	3737
Attorney Docket No.	RYOU-OP275US

METHOD OF PAYMENT (check all that apply)

Check Credit card Money Order Other None

 Deposit Account:

Deposit Account Number	02-0910
Deposit Account Name	Brown & Michaels, PC

The Director is authorized to: (check all that apply)

- Charge fee(s) indicated below Credit any overpayments
 Charge any additional fee(s) or any underpayment of fee(s)
 Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEES CALCULATION (continued)**1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 790	2001 395	Utility filing fee	
1002 350	2002 175	Design filing fee	
1003 550	2003 275	Plant filing fee	
1004 790	2004 395	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)		(\$ 0.00)	

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Independent Claims	Multiple Dependent	Extra Claims	Fee from below	Fee Paid
			-20** =	X 18.00	= 0.00
			-3*** =	X 88.00	= 0.00

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 88	2201 44	Independent claims in excess of 3
1203 300	2203 150	Multiple dependent claim, if not paid
1204 88	2204 44	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)		(\$ 0.00)

**or number previously paid, if greater; For Reissues, see above

3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	110.00
1252 430	2252 215	Extension for reply within second month	
1253 980	2253 490	Extension for reply within third month	
1254 1,530	2254 765	Extension for reply within fourth month	
1255 2,080	2255 1,040	Extension for reply within fifth month	
1401 340	2401 170	Notice of Appeal	
1402 340	2402 170	Filing a brief in support of an appeal	
1403 300	2403 150	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,370	2501 685	Utility issue fee (or reissue)	
1502 490	2502 245	Design issue fee	
1503 660	2503 330	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 790	2809 395	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 790	2810 395	For each additional invention to be examined (37 CFR 1.129(b))	
1801 790	2801 395	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 110.00)**SUBMITTED BY**

(Complete if applicable)

Name (Print/Type)	Meghan Van Leeuwen	Registration No. (Attorney/Agent)	45,612	Telephone	607-256-2000
Signature	<i>Meghan Van Leeuwen</i>			Date	11/21/04

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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FEB 8 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. 10/045,866
Applicant: Komachi
Filed: October 29, 2001
Title: ANALYSIS SYSTEM OF MATTER ADHERED TO INSIDE
WALL OF VESSEL
Art Unit: 3737
Examiner: Qaderi, Runa S.
Confirmation Number: 1103
Attorney Docket No.: RYOU-OP275Us

Commissioner of Patents and Trademarks
Alexandria, VA 22313-1450

**PETITION FOR EXTENSION OF TIME TO FILE RESPONSE
ACCOMPANIED BY FEE**

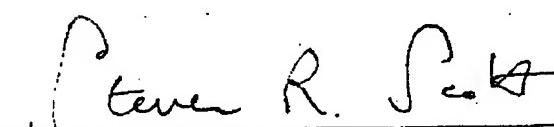
The applicant herewith petitions the Commissioner of Patents and Trademarks to extend the time to respond to the Office Action dated July 2, 2004, for one month, from October 2, 2004 to November 2, 2004.

A check in the amount of \$ 110.00 is attached for payment of extension fee.

The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to Deposit Account No. 02-0910. A duplicate of this transmittal is attached.

Respectfully submitted:

Date: 11/2/04



Steven R. Scott, Registration No.: 32,000
BROWN & MICHAELS, PC
400 M & T Bank Building, 118 N. Tioga Street
Ithaca, New York 14850-4343
Voice: (607) 256-2000 Fax: (607) 256-3628

FEB 8 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Alexandria VA 22313-140

Serial No. 10/045,866
Applicant: Komachi
Filed: October 29, 2001
Title: ANALYSIS SYSTEM OF MATTER ADHERED TO INSIDE WALL OF VESSEL
Art Unit: 3737
Attorney Docket No.: RYOU-OP275US

INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this information Disclosure Statement

1. Preliminary Statements
2. FORM PTO - 1449 (Modified)
3. Statement As To Information Material To Examination Not Found in Patents or Publications
4. Identification of Prior Application In Which Listed Information Was Already Cited and For Which No Copies Are Submitted Or Need Be Submitted.
5. Cumulative patents or Publications
6. Copies of Listed Information Items Accompanying This Statement
7. Concise Explanation of Non-English Language Listed Information Items.
8. Translation(s) of Non-English Language Documents
9. Certification under MPEP 609(e)
10. Identification of Person(s) Making This Information Disclosure Statement

CERTIFICATE OF MAILING

Certified Mail No: 7002 0860 0005 0313 7600

Date: November 2, 2004

I hereby certify that this correspondence is being deposited with the United States Postal Service, return receipt requested in an envelope addressed to: Mail Stop amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date.


Justin Wood

FEB 8 2005

Section 1. Preliminary statements

Applicant submits herewith patents, publications or other information of which he is aware, which he believes may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR 1.56.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 CFR 1.56(g)), an admission that the information cited is, or is considered to be, material to patentability or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Section 2. Form PTO - 1449 (Modified) (SEE ATTACHMENT)

*EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw a line through citation if not in conformance or not considered. Include a copy of this form with the next communication to applicant.

Section 3. Statement As To Information Material For Examination Not Found in Patents or Publications (Information not listed in PTO 1449)

Section 4. Identification of Prior Application in Which Listed Information Was Already Cited and For Which No Copies Are Submitted Or Need Be Submitted

Section 5. Cumulative Patents or Publications

Item(s)

are cumulative of the following patents or publication listed on Form PTO 1449 (modified):

In accordance with 37 CFR 1.98(c) a copy of _____ is being submitted with this information disclosure statement.

Section 6. Copies of Listed Information Items Accompanying This Statement

Legible copies of all items listed accompany this information statement.

Exception(s) to above:

Items in prior application from which an earlier filing date is claimed for this application as identified in Section 4.

Cumulative patents or publications identified in Section 5.

Section 7. Concise Explanation of Non-English Language Listed Information Items

Section 8. Translation(s) of Non-English Language Documents

Submitted herewith is an English translation of the following foreign language patents, publications or information or of those portions of those patents, publications or information considered to be material:

No English language translations of the foreign language patents, publications or information or parts thereof are readily available, except for those listed above.

The following foreign language documents submitted are believed to be the equivalent or

substantial equivalent of the English language documents identified below, which are also submitted herewith.

Section 9. Certification under Rule 1.97

The undersigned hereby certifies that:

a. This Statement is being filed after the latest of (1) three months after the filing date of a national application; (2) three months after the date of entry of the national stage as set forth in w 1.491 in an international application; (3) the mailing date of a first Office action on the merits.

b. The fee set forth in §1.17(p)

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Section 10. IDENTIFICATION OF PERSON(S) MAKING THIS INFORMATION DISCLOSURE STATEMENT

The person making this statement is

(a) the inventor(s) who signs below

(b) [X] the attorney who signs below on the basis of:

the information supplied by the inventor(s)

an individual associated with the filing and prosecution of this application (37 CFR 1.56(c)).

the information in the attorney's file

Steven R. Scott

11/2/04

Steven R. Scott, Registration No. 32,000

BROWN & MICHAELS, PC

400 M&T Bank Building, 118 N. Tioga Street

Ithaca, New York 14850-4343

Voice: (607) 256-2000 Fax: (607) 256-3628

e-mail: bpm@bpmlegal.com

Customer number: 020808

Date:

FEB 8 2005

Section 2. Form PTO - 1449 (Modified) (ATTACHMENT)

FORM PTO-1449 U.S. DEPT. OF COMMERCE (Modified) PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO. RYOU-OP275US	SERIAL NO. 10/045,866
	APPLICANT Komachi	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE October 29, 2001	GROUP 3737

U.S. PATENT DOCUMENTS

Exam Initial		DOCUMENT NUMBER	DATE	PATENTEE	CLASS	SUB	FILING DATE IF APPROPR
		5,953,477	09/14/1999	Wach et al.	385	115	

FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

Exam Initial		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB	TRANSLATION YES NO

OTHER PRIOR ART

Exam Initial		Author, Title, Date, Pertinent Pages, Etc

EXAMINER	DATE CONSIDERED

FEB 8 2006



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

November 2, 2004

Serial No. 10/045,866
Applicant: Komachi
Filed: October 29, 2001
Title: ANALYSIS SYSTEM OF MATTER ADHERED TO INSIDE
WALL OF VESSEL
Art Unit: 3737
Examiner: Qaderi, Runa S.
Confirmation Number: 1103
Attorney Docket No.: RYOU-OP275Us

HONORABLE COMMISSIONER OF PATENTS
Alexandria, VA 22313-1450

**AMENDMENT
AND RESPONSE TO OFFICE ACTION**

In response to the Office Action dated July 2, 2004, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 8 of this paper.

CERTIFICATE OF MAILING

Certified Mail No.: 7002 0860 0005 0313 7600 Date: November 2, 2004

I hereby certify that this correspondence is being deposited in the U.S. Postal Service as Certified Mail with a return receipt requested, in an envelope addressed to the Commissioner of Patents Alexandria VA 22313-1450.

Justin Wood

FEB 8 2005

Amendments to the Specification:

Pursuant to 37 C.F.R. § 1.121(b) kindly amend the specification by deleting the current Abstract and inserting the following:

An analysis system comprises an endoscope 10 insertable into the vessel and a Raman analysis apparatus 40. An insert cable 54 of the Raman analysis apparatus 40 is inserted into a channel 10a of the endoscope 10. An excitation optical fiber 60 and a bundle 70A of a plural number of light receiving optical fibers 70 are received in the insert cable 54. A transparent small piece 63 having a film-like excitation optical filter 64 is abutted against the distal end of the fiber 60. A transparent plate 71 having a film-like light receiving optical filter 72 is abutted against the distal end of fibers bundle 70A. The plate 71 has a center hole 71a and the piece 63 is fitted into the hole 71a.

Amendments of the Claims:

A detailed listing of all claims in the application is presented below. This listing of claims will replace all prior versions, and listings, of claims in the application. All claims being currently amended are submitted with markings to indicate the changes that have been made relative to immediate prior version of the claims. The changes in any amended claim are being shown by strikethrough (for deleted matter) or underlined (for added matter).

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (New): An analysis system of matter adhered to an inside wall of a vessel comprising:
a guiding apparatus including
 a main body portion,
 a flexible insert portion extending from said main body portion and
 being able to be inserted into said vessel and having a window
 formed in a distal end thereof, and
 a channel extending through said main body portion and insert portion
 and reaching said window; and

a Raman analysis apparatus including

- a light source emitting an excitation light,
- a spectroscope spectrally analyzing said matter adhered to the inside wall of said vessel,
- a flexible insert cable to be inserted into said channel and whose distal end is faced with said window,
- an excitation optical fiber being received in said insert cable and whose basal end is connected to said light source for transmitting said excitation light and whose distal end is arranged at a central area of the distal end portion of said insert cable,
- a plural number of light receiving optical fibers being received in said insert cable and whose basal end are connected to said spectroscope and whose distal end are arranged in such a manner as to surround said excitation optical fiber at the distal end portion of said insert cable,
- a transparent excitation small piece having a film-like excitation optical filter adhered to a surface thereof and the surface being abutted against a distal end of said excitation optical fiber, said film-like excitation optical filter cutting all light only excepting a light having a predetermined wavelength, and
- a transparent light receiving plate having a film-like light receiving optical filter adhered to a surface thereof and the surface being abutted against distal ends of said plural number of light receiving optical fibers, said film-like light receiving optical filter cutting only a light having said predetermined wavelength,

wherein said excitation light along said excitation optical fiber is projected through said window and Raman scattered by impinging on said matter adhered to the inside wall of said vessel, said scattered light is made incident to said window, and said incident light is transmitted along said light receiving optical fibers to said spectroscope for analyzing, and

wherein said transparent light receiving plate has a center hole and said transparent excitation small piece is fitted into said center hole.

10. (New): An analysis system of matter adhered to an inside wall of a vessel according to claim 9, wherein another excitation optical filter for cutting all light only excepting a light having said predetermined wavelength is disposed between said light source and said excitation optical fiber.
11. (New): An analysis system of matter adhered to an inside wall of a vessel according to claim 9, wherein said guiding apparatus is an endoscope through which an interior of said vessel can be observed.
12. (New): An analysis system of matter adhered to an inside wall of a vessel comprising:
 - a guiding apparatus including
 - a main body portion,
 - a flexible insert portion extending from said main body portion and being able to be inserted into said vessel and having a window formed in a distal end thereof, and
 - a channel extending through said main body portion and insert portion and reaching said window; and
 - a Raman analysis apparatus including
 - a light source emitting an excitation light,

a spectroscope spectrally analyzing said matter adhered to the inside wall of said vessel,

a flexible insert cable to be inserted into said channel and whose distal end is faced with said window,

an excitation optical fiber being received in said insert cable and whose basal end is connected to said light source for transmitting said excitation light, and

a plural number of light receiving optical fibers being received in said insert cable and whose basal end are connected to said spectroscope and whose distal end are bundled at the distal end of said insert cable,

wherein a distal end of said excitation optical fiber is arranged at an outer side in a radial direction of said bundle of light receiving optical fibers at the distal end portion of said insert cable, and

wherein a distal end face of said excitation optical fiber is slanted with respect to an axis of said excitation optical fiber so that an optical axis of said excitation light along said excitation optical fiber is deflected in a direction intersecting a center axis of said bundle of light receiving optical fibers which is orthogonal to a distal end face of said bundle of light receiving optical fibers, said deflected excitation light is projected through said window and Raman scattered by impinging on said matter adhered to the inside wall of said vessel, said scattered light is made incident to said window, and said incident light is transmitted along said bundle of light receiving optical fibers to said spectroscope for analyzing.

13. (New): An analysis system of matter adhered to an inside wall of a vessel according to claim 12, wherein a film-like excitation optical filter for cutting all light only excepting a light having a predetermined wavelength is adhered to said slant distal end face of said

excitation optical fiber, and a film-like light receiving optical filter for cutting only a light having said predetermined wavelength is adhered to said distal end face of said bundle of light receiving optical fibers.

14. (New): An analysis system of matter adhered to an inside wall of a vessel according to claim 13, wherein another excitation optical filter for cutting all light only excepting a light having said predetermined wavelength is disposed between said light source and said excitation optical fiber.

15. (New): An analysis system of matter adhered to an inside wall of a vessel according to claim 12, wherein said guiding apparatus is an endoscope through which an interior of said vessel can be observed.

REMARKS

The office action of July 2, 2004 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1 through 8 have been cancelled and claims 9 through 15 are being added by this response.

Objections to the Abstract

The Examiner has rejected the Abstract, stating:

The abstract of the disclosure is objected to because it exceeds the 150 words limit. Correction is required. See MPEP § 608.01(b).

The original Abstract has, accordingly, been deleted and a new replacement Abstract added. Reconsideration and withdrawal of the objection is, therefore, respectfully requested.

Rejection(s) under 35 U.S.C. §102

Claims 1, 2 and 8 were rejected under 35 U.S.C. 102(b) as being anticipated by *Alfano et al.* (5,293,872). The Examiner states that:

Alfano et al. teaches method and corresponding apparatus for distinguishing of matter adhered to an inside of a vessel using Raman spectroscopy. With reference to applicant's claim 1, figures 6 and 9 of Alfano et al. below clearly teach a guiding apparatus 109 including a main body, a flexible insert portion extending from said main body portion and having a window formed in a distal end thereof, and a channel extending through said main body portion and insert portion and reaching said window, said insert portion being able to be inserted into said vessel; said Raman analysis system including a flexible channel 125/80 to be inserted into said channel and whose distal end is faced with said window, an excitation optical fiber 81 and a light receiving fiber 83 which are both received in said insert cable, a light source 121/135 connected o basal end of said excitation optical fiber, and a spectroscope 127 connected to a basal end of said light receiving optical fiber; and an excitation light emitted from said light source 121/135 projected through said window via said excitation optical fiber 81 and Raman scattered by impinging on said matter adhered to the inside wail of said vessel, spectrometer 127 via said light receiving optical fiber 83, and thus said matter adhered to the inside wall of said vessel being analyzed, column 7 through 9, more specifically column 7 lines 20-33 and column 8. With respect to claim 2 figures 6 (above) and 7 and column 7 lines 20-33 clearly diagram and discuss, respectively, a single number of said excitation optical fiber 81 and plural number of said light receiving optical fibers 83; and at a distal end portion

of said insert cable, said single number of excitation optical fiber 81 is arranged at a central area thereof and said plural number of light receiving optical fibers 83 are arranged in such a manner as to surround said excitation optical fiber 81. Finally with respect to claim 8 Alfano et al. column 9 lines 9-28 recites that the endoscope 141 (interpreted as the guiding apparatus of the applicant) is sized and shaped to fit within an artery or other blood vessel.

Applicant respectfully disagrees with this rejection, but has (nonetheless) replaced these claims with new claims superseding the grounds for rejection stated.

New claim 9 basically combines the limitations of original claims 1, 2 and 3, overcoming the rejection under 102. It is, therefore, respectfully suggested that the rejection of independent claim 1 and dependent claim 2 as being anticipated by *Alfano et al.* is overcome in new claim 9. Dependent claims 10 and 11, being dependent upon and further limiting independent claim 9, should also be allowable over 102 for that reason, as well as for the additional recitations they contain.

Reconsideration and withdrawal of the 102 rejection are, for aforesaid reasons, respectfully requested.

Rejection(s) under 35 U.S.C. §103

Claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Alfano et al.* in view of *Janes et al.* Claims 3, 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Alfano et al.* in view of *Wach et al.* With regard to claims 4 and 5, the Examiner states that:

Alfano et al. teaches an apparatus for distinguishing matter adhered to the inside wall of a vessel using Raman spectroscopy. With respect to claims 4 and 5 Alfano et al. does not explicitly recite said optical means for deflecting an optical axis of said excitation light in a direction intersecting a center axis of said bundle of light receiving optical fibers is disposed at a distal end of said excitation optical fiber, wherein a distal end face of excitation optical fiber is slanted with respect to an axis of said excitation optical fiber and said distal end face is provided as said optical means. The Janes et al. reference teaches a device for optical diagnosis of tissue using a probe with a bundle of optical fibers having a beveled surface, column 6 lines 52-62. Figure 6A of Janes et al. below diagram the bundle of optical fibers having a beveled surface.

The beveled or tapered structure of the distal ends of the optical fibers shown above satisfies the applicant's limitation to said optical means for deflecting an optical axis of

said excitation light in a direction intersecting a center axis of said bundle of light receiving optical fibers is disposed at a distal end of said excitation optical fiber, wherein a distal end face of excitation optical fiber is slanted with respect to an axis of said excitation optical fiber and said distal end face is provided as said optical means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the beveled or slanted optical fiber surface of Janes et al. into the probe of Alfano et al. because such a structure provides for controlled light transmission and detection as taught by Janes et al., column 1 lines 45-47 and column lines 61-64. Therefore providing a more efficient analysis of the tissue.

Finally the combination of Alfano et al. in view of Janes et al. does not explicitly teach said excitation optical fiber arranged at an outer side in a radial direction of said bundle of light receiving optical fibers. It would have been obvious to a person of ordinary skill in the art to provide for such an arrangement because applicant's function of maximizing emission and detection of light by the slanted or beveled optical fiber surface is satisfied by the structure of Alfano et al. in view of Janes et al.

And, with regard to claims 3, 6, and 7, the Examiner states that:

Alfano et al. teaches an apparatus for distinguishing matter adhered to the inside wall of a vessel using Raman spectroscopy. Alfano et al., figure 1, diagrams a filter 17 disposed between excitation optical fiber and light source.

Alfano et al. does not teach a film-like excitation filter adhered to the distal end of excitation optical fiber and a film-like filter adhered to the distal end of the receiving optical fiber as claimed in 6 and 7. In reference to claim 3 Alfano et al. does not teach the light receiving plate with corresponding film-like filter adhered to it for excitation and receiving optical fibers.

Wach et al. teaches filtering optical fibers by depositing thin films directly onto the ends of the optical fiber (or adhered to distal ends as claimed by applicant) to be used to produce high-quality, high performance filters, see Abstract. It would have been obvious to a person of ordinary skill in the art to have deposited/adhered the film-like filters onto the ends of optical fibers as taught by Wach et al. into the probe system of Alfano et al. because it allows effective and efficient manipulation of the light delivery and reception region especially during Raman analysis as taught by Wach et al. Furthermore it would have been obvious to have alternatively adhered the film-like filters on the light plate/window of the probe because it provides the equivalent function of filtering the illumination and detection light thereby improving Raman scattering analysis.

Applicant respectfully disagrees with these rejections.

As to original claim 3, the applicant claimed that said transparent light receiving plate has a center hole and said transparent excitation small piece is fitted into said center hole. This is taught by neither of the references cited against claim 3. Wach teaches filtering optical fibers by

depositing thin films directly onto the ends of the fibers. And, even if it would have been obvious for a person skilled in the art to have alternatively adhered the film-like filters on the light plate as the examiner says, it would not have been obvious to have a hole in the plate and a small piece fitted into the hole. Thus, claim 9 (which combines original claims 1, 2 and 3) cannot be obtained even if the cited documents are combined. Dependent claims 10 and 11, being dependent upon and further limiting new independent claim 9, should also be allowable over 103 for the aforesaid reason(s), as well as for the additional recitations they contain. Reconsideration and withdrawal of the 103 rejection are, for these reasons, respectfully requested.

The rejection of original claims 4 and 5 under 103 is superseded by and in new independent claim 12. This claim is similar to original claims 4 and 5, but it is more limited in that a distal end face of said bundle of light receiving optical fibers is orthogonal to a center axis of said bundle of light receiving optical fibers. This restriction is a matter which can be easily discerned in the description of the present invention.

In claim 12, only the excitation optical fiber has a slant distal end face. The excitation optical fiber is arranged at an outer side in a radial direction of the bundle of light receiving optical fibers. By this, the excitation light approaches the center of sight field of the light receiving optical fibers for a while after coming out of the slant distal end face of the excitation optical fiber and then the light passes through the center of the sight field so that it can impinge on a place of the vessel inside wall nearer to the center of the sight field.

On the other hand, in Janes et al., the distal end faces of all fibers 111a-114g are slanted and the light projecting fiber 114g is arranged at the center of surrounding light receiving fibers 111a-111f. Even if Janes et al. is combined with Alfano, claim 4 can never be obtained and the effect mentioned above also cannot be obtained. Consequently claim 12 should be allowed. Dependent claims 13, 14 and 15, which further limit claim 12 should, likewise, be allowable.

Reconsideration and withdrawal of the 103 rejections are, for the aforesaid reasons, respectfully requested.

Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

Respectfully Submitted:

Komachi

By: Peter R. Scott

Steven R. Scott, Registration No.: 32,000
Attorney for Applicant

BROWN & MICHAELS, P.C.
400 M&T Bank Building - 118 N. Tioga St.
Ithaca, NY 14850
(607) 256-2000 • (607) 256-3628 (fax)
e-mail: docket@bpmlegal.com
Dated: November 2, 2004